

REMARKS

The Office action of January 8, 2010, has been received and the thoroughness and detailed comments are appreciated, as is the withdrawal of the objections to claim 38 and 50, now claims 55 and 63, respectively.

All of claims 53 to 64, as they appear on pages 5 to 8 of the paper filed October 13, 2009, are retained without change and reconsideration of the final rejection thereof is respectfully requested in view of the following comments.

The rejections of claims 53-62 is based primarily on Patent No. 5,292,666 (Fabinski) , with claims 63 and 64 being rejected on the basis of Patent No. 5,425,919 (Inoue) and Fabinski. Accordingly, a critical analysis of Fabinski appears to be in order, as applicants cannot agree with certain ones of the assertions made in the Office action concerning those patents.

The first part of the Examiner's interpretation of Fabinski, appearing in Paragraph 5 of the action, is basically correct, as is the acknowledgement, in Paragraph 6, that Fabinski does not disclose a batch process. The corresponding interpretation of Patent No. 4,277,438(Ejzak), will be referred to below. However, it is believed that a significant misinterpretation of Fabinski appears in Paragraph 7, it being of major importance that the Examiner, although correctly explaining the calibration cuvette aspect of Fabinski, does not include the required comparison with the clear and detailed calibration aspects of claim 53. It should also be

mentioned that some of the comments in Paragraph 7 are open to question insofar as they seem to refer to features such as "a section of a hose" , which are not in claim 53. In Fabinski, a calibration gas is enclosed in the calibration cuvette and the cuvette is slid into a beam path between a radiation source, the sample cuvette and a receiver of the NDIR detector for the purpose of setting the end point of the respective amplifier of the detector apparatus, see column 6, lines 33 – 40 of Fabinski. While it may be that such calibration cuvette can be filled from a calibration gas bottle with different calibration gases, it is important to note that there is no flow whatsoever of this calibration gas during the calibrating step and within the apparatus, and more specifically, there is no feeding of the calibration gas, together with the transport gas, through the apparatus, including the heating vessel, the sample transport pipes and the detector. According to the present invention, the calibration gas is injected into the carrier gas flow and is brought into the oven (reactor) together with the carrier gas, and having been subjected to the process in the reactor – like in a liquid sample measurement - it is further brought to the subsequent components of the apparatus and finally to the detector. In view of the fact that the calibration gas is handled in this manner, the calibration gas can but need not be carbon dioxide but can, for example, be methane or other carbon containing gas, whereas in the cuvette of Fabinski it is carbon dioxide exclusively that must be used.

Attention is also directed to the fact that the calibration gas in the cuvette just in front of the detector can not be used to calibrate the measuring apparatus as a whole, the reason for this being that under this circumstance the calibration gas is an isolated static element resting in the optical path within the detector for the purpose of setting the amplifier characteristic of the detector. Such calibration of the apparatus as a whole is a completely different thing than merely setting an end point of the detector range. The medium which flows through the apparatus, be it the sample or the calibration gas, is subject to influences such as leaks within or between parts of the apparatus, "aging" of a catalyzer, if one used in the process, etc. If the calibration gas flows through the apparatus into the detector portion, the detection result reflects such influences.

Such type of calibration of the apparatus could also be made in Fabinski, but insofar as the use calibration agent is concerned, Fabinski makes it clear that the calibration medium is a *liquid*, see column 5, lines 19 to 25, of the patent. Fabinski can be taken to teach two things, one being the use of a calibration cuvette with an enclosed calibration gas for setting a detector end point and the other being the use of a calibration liquid flowing through the apparatus for setting the zero point and sensitivity of the detector. It is eminently clear that there is no cross-relation whatsoever between these two teachings.

At this point the Examiner's attention is directed to the attached three figures, one showing the calibration gas and liquid in Fabinski, another figure showing the calibration gas in applicants' apparatus (referred to Arts), there being no calibration cuvette and no calibration liquid in Arts, and another figure showing the calibration gas path in Arts.

Given the above analysis of Fabinski, it is submitted the Inoue's disclosure of a flow controller for controlling the flow of high purity air, as a transport gas, into the analyzer appears to be of no relevance insofar as considering the obviousness of the features set forth in claim 53 is concerned. As neither Fabinski nor Inoue teach the feeding a calibration a calibration gas into the sample flow path of the apparatus, or the specific features of the feeding path as set forth in claim 53, it is respectfully submitted that a combination of Fabinski and Inoue does not show or make obvious that which is set forth in that claim.

Applicants cannot agree with the substance of what is set forth at the end of Paragraph 7 of the action. If the "specified amount" of calibration gas as set forth in the claim is understood to be a hint not to waste calibration gas, it does not take into consideration the fact that the feeding of a specified amount of calibration gas into the apparatus is decisive for the calibration process as such, irrespective of an efficient exploitation of the calibration gas. Only a precisely specified amount of the calibration gas will bring a likewise specified amount of the element to be detected into the apparatus and allow for the requested calibration, the specified amount of

the calibration gas experiencing the same influences as a likewise precisely specified amount of sample which is introduced into the apparatus during the measuring step. It is clear that this has nothing to do with filling the calibration cuvette of Fabinski with a gas, where it is not the amount of the gas but the thickness of the interior of the cuvette and the gas concentration that are important.

Here it must also be noted that the claim calls for a batch process whereas Fabinski teaches a continuous process, i.e., a process involving a continuous gas flow. Using precisely specified amounts of sample on the one hand and calibration gas on the other is not relevant, and therefore this feature of the claimed invention is not shown by or obvious from Fabinski. Moreover, even adding what is shown Ejzak can not be said to show this feature or to make it obvious, since the mere mention of a batch process by Ejzak, in a completely different context would not teach one of ordinary skill in the art to provide a calibration gas in the measuring apparatus in the way specified in claim 53.

The dependent process claims add further features but are submitted to be allowable together with claim 53 for the reasons set forth above. Moreover, they recite features not shown in or made obvious by the prior art and the dependent claims should therefore be allowed irrespective of the disposition of claim 53.

Concerning apparatus claim 63, applicants do understand the Examiner's description of Inoue, as set forth in Paragraph 15. However, that paragraph appears to analogize the transport gas reservoir disclosed in Inoue with the calibration gas

reservoir of the present invention, the latter being provided *in addition* to a transport gas source and, in a manner clearly different from Inoue, is *switchably* connected to the transport gas path, alternating with the sample feeding unit. It has already been mentioned in a prior response that Inoue does involve any calibration, and additionally, the structural differences between Inoue and what is claimed should be taken into consideration.

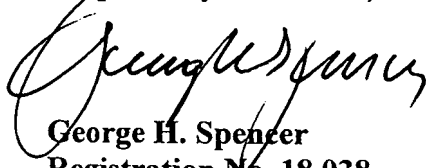
Concerning the additional reference to Fabinski in Paragraph 16, the Examiner refers to the two-chamber calibration cuvette and the use of carbon dioxide as a comparison gas. For one thing, these aspects of Fabinski are unrelated factors, and for another thing, the comparison gas aspect has nothing to do with the calibration aspect. Of even greater significance is the fact that Fabinski teaches the use of a calibration liquid simply instead of a sample liquid and consequently does not disclose any specific storing, feeding and switching means which become necessary only if a gas and not a liquid is used for calibration purposes. In view of this, it is submitted that, as Inoue lacks the applicable features, combining the references would show or make obvious the subject matter of claim 63.

As for dependent apparatus claim 64, it is submitted that the same is allowable for the reasons set forth above but should in any event be allowed in view of the additionally recited features which are not shown or made obvious by the prior art.

It is hoped that the above will cause the rejection of the claims to be reconsidered and withdrawn. However, should it appear that there any issues or questions that remain to be resolved, it is respectfully requested that Examiner call undersigned counsel to arrange for a personal conference, which, it is expected, would be attended by the first-named inventor, Dr. Arts who would come from Germany for the purposes of attending the conference, or if this is not possible, by a knowledgeable representative of applicant's assignee.

Also, while the claims have been retained without change for the reasons set forth above, applicants would be receptive to any suggestions the Examiner may offer which would cause the rejection to be withdrawn.

Respectfully submitted,



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Attachments: 3 figures